

**ABSTRACT**

The present invention provides an animal model with overexpression of regucalcin that overexpresses regucalcin, which is inherently expressed in the liver and the like of the higher animal, showing bone pathology typified by osteoporosis. Regucalcin cDNA is cloned from rat liver cDNA library, and cDNA encoding the full-length of regucalcin protein is isolated. ORF is cut from said rat regucalcin full length cDNA and introduced into an expression vector (pCXN2). Said gene expression vector is microinjected to male pronucleus of the fertilized egg of rat. Said fertilized egg is transplanted into the uterine tube of a host rat to generate rats. Thus, homozygous rats are constructed from said generated rats. Said transgenic rats show remarkable bone pathology, morphologically as well as biochemically, and the body weight gain is suppressed significantly.